Environmental Restoration

# Project Shoal

## . . .an Offsites Project

## History and Site Overview

Project Shoal, located in Northern Nevada, was the site of an underground nuclear test conducted jointly in 1963 by the U.S. Department of Defense (DoD) and the U.S. Atomic Energy Commission (predecessor to the U.S. Department of Energy - DOE). As part of the Vela Uniform program, the test was designed to improve the nation's ability to identify and locate underground nuclear explosions.

Project Shoal is located approximately 30 miles southeast of Fallon, Nevada, in Churchill County. Although the U.S. Department of the Interior - Bureau of Land Management maintains ownership of the land, a land withdrawal allows the DOE and the DoD to manage the site.

*Drilling activities at Shoal*

## Site Cleanup

In 1996, the DOE National Nuclear Security Administration Nevada Site Office (NSO) began environmental restoration activities at the Shoal site (the site had officially been demobilized in 1964) to investigate potential environmental impacts from previous testing. The Federal Facilities Agreement and Consent Order (FFACO), the agreement that governs DOE sites in Nevada, outlined the investigation and cleanup strategy. The surface and subsurface areas at the Shoal site were to be considered separately.

### *Surface*

NSO conducted surface characterization at Shoal and determined that chemicals called hydrocarbons, which were deposited during drilling activities into a mud pit, remained in the soil. In 1997, NSO removed and transported the contaminated material offsite to a designated disposal facility at the Nevada Test Site. The Nevada Division of Environmental Protection (NDEP) approved the surface as "clean closed" in early 1998.

**Shoal** is one of eight Offsites currently managed by the Nevada Site Office's Environmental Management Program. Offsites are located off of the Nevada Test Site (two in Nevada, two in Colorado, two in New Mexico, one in Alaska, and one in Mississippi).

### *Subsurface*

In 1996, the NSO installed four characterization wells at the Shoal site to better understand the area's groundwater system and to determine the potential migration paths of radionuclides (radioactive constituents) that were introduced during the underground nuclear test. Sampling data from these wells was used to design what is called a flow and transport computer model, which produces a three-dimensional illustration of this groundwater system. Four additional wells were drilled in 1999 when preliminary model results indicated a need for further data. After collecting additional information and producing a new groundwater model, NSO submitted a modeling report to NDEP in 2003.

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## Status

NDEP concurred on the groundwater model and is reviewing the corrective action plan developed by DOE. The corrective action plan proposes long-term monitoring. The plan identifies the installation of three more monitoring wells on site to be utilized as part of the planned monitoring program.


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